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Final Site Inspection Report
Burt Company
Portland, Maine

CERCLIS No. MED985468024
TDD No. 9104-20-AWS
Work Assignment 09-1JZZ
Work Order No. 4100-09-08-0005

INTRODUCTION

The Roy F. Weston, Inc., Alternative Remedial Contract Strategy (WESTON/ARCS) team was requested by the Region I U.S. Environmental Protection Agency (EPA) Waste Management Division to perform a Site Inspection of the Burt Company site in Portland, Maine. Tasks were conducted in accordance with the ARCS contract, the Site Inspection scope of work, and technical specifications provided by the EPA under Work Assignment No. 09-1JZZ which was issued to WESTON/ARCS on March 26, 1991. A Preliminary Assessment of the site was completed on December 11, 1990 by the Maine Department of Environmental Protection (ME DEP). According to the Preliminary Assessment, Burt Company manufactured poker chips and billiard balls at the property until 1988. Between 1989 and 1990, the Portland Fire Department responded to several fires at the property which destroyed three buildings on-site. In 1990, the Portland Fire Department notified ME DEP that hazardous wastes were spread throughout the site by vandals. On the basis of the information provided in the Preliminary Assessment, the Burt Company Site Inspection was initiated.

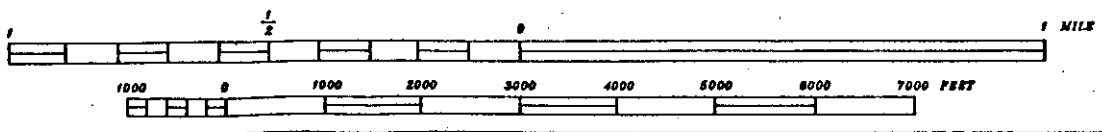
Background information used in the generation of this report was obtained through file searches conducted at the ME DEP and the Maine Department of Health Engineering, telephone interviews with town officials, conversations with persons knowledgeable of the Burt Company site and conversations with other Federal, State and local agencies. Additional information was also collected during the WESTON/ARCS on-site reconnaissance on May 7, 1992 and sampling trip on June 10, 1992.

This package follows guidelines developed under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) of 1980, as amended, commonly referred to as Superfund. However, these documents do not necessarily fulfill the requirements of other EPA regulations such as those under the Resource Conservation and Recovery Act (RCRA) or other Federal, State or local regulations. Site Inspections are intended to provide a preliminary screening of sites to facilitate EPA's assignment of site priorities. They are limited efforts and are not intended to supersede more detailed investigations.

SITE DESCRIPTION

The Burt Company (Burt) site is located at 1 Cambridge Street in Portland, Cumberland County, Maine at latitude 43° 41′ 19″ and longitude 70° 17′ 20″ (Figure 1). The site is approximately 3.1 acres and corresponds to the Portland Tax Assessor's map 151-A, lot 13 (Merkl 1991). In October 1989, the structures on-site were damaged by fire resulting in the

BASE MAP IS A PORTION OF THE FOLLOWING 7.5' U.S.G.S. QUADRANGLE(S):
PORTLAND WEST, ME, 1956 (PHOTOREVISED 1978) 1 : 24,000



LOCATION MAP

BURT COMPANY
PORTLAND, MAINE

WESTON MANAGERS DESIGNERS/CONSULTANTS

FIGURE 1

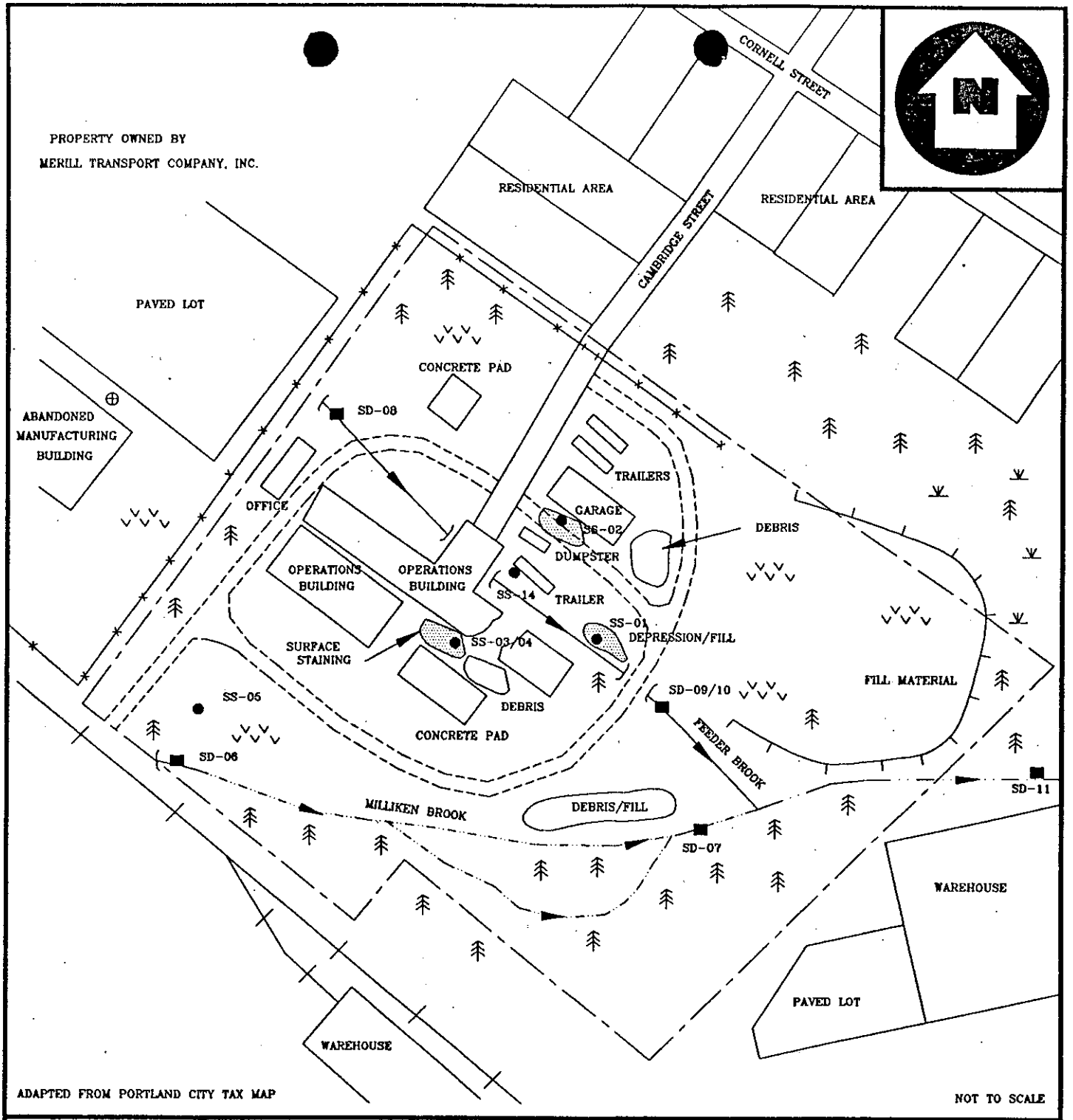
abandonment of the property (ME DEP 1991a). Subsequent vandalism resulted in the release of various powdered dyes and lead monosilicate within buildings on-site and onto soils between the operations building and garage (ME DEP 1990a). In March 1990, ME DEP analyses of these materials revealed elevated concentrations of barium and lead (ME DEP 1990c). In June 1990, the ME DEP requested that the Burt site be included in the Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) as a potential hazardous waste site (ME DEP 1990b).

The Burt site is zoned for industrial use but is bounded by a residentially zoned area to the northeast (Merkl 1992a). During the on-site reconnaissance, WESTON/ARCS observed four buildings on the property, two of which were formerly used for manufacturing operations, one which served as an office, and the fourth building which was used as a storage garage (WESTON/ARCS 1992) (Figure 2). The two operations buildings and the office building were destroyed by fire in 1989 (WESTON/ARCS 1992). Figure 2 illustrates these and other pertinent site features observed during the on-site reconnaissance and sampling trip.

During the on-site reconnaissance, the WESTON/ARCS team observed a chain link fence which spans the entire northwest side of the site as well as one-half of the northeast side of the property (Figure 2). No fence is located along the southeast or southwest property boundaries. The existing fence has a locking gate on Cambridge Street which serves to restrict vehicular traffic but does not restrict pedestrian access (WESTON/ARCS 1992). During on-site reconnaissance, the main gate was locked, but a local resident indicated that he held a key to the gate. A ME DEP warning sign is posted on the Cambridge Street gate advising that hazardous materials may be present on-site (WESTON/ARCS 1992). No other fences or notices were observed on the property.

Based on available background file information and on-site observations, no underground storage tanks or observation wells exist on the property (WESTON/ARCS 1992). However, a monitoring well was observed on the Merill Transport Company, Inc. property which bounds the Burt site to the northwest (WESTON/ARCS 1992) (Figure 2).

During the WESTON/ARCS on-site reconnaissance, two tributaries were observed flowing through the property, a feeder brook and Milliken Brook (Figure 2). Both brooks entering the property showed significant sedimentary discoloration with a bright orange to brownish appearance. The cause of the discoloration could not be determined, but appeared to originate from sources upstream from the Burt site. The WESTON/ARCS team observed an area on the east side of the site which was backfilled with soil into an adjacent wetland (WESTON/ARCS 1992). The existing slope, where the fill and the wetland meet, drops off approximately 12 feet. No foreign or unnatural material was observed in the material, but several areas of sparse vegetation were observed on the surface of the fill (WESTON/ARCS 1992).



SITE SKETCH

BURT COMPANY
PORTLAND, MAINE

WESTON MANAGERS DESIGNERS/CONSULTANTS

FIGURE 2

The site is mainly covered with natural vegetation (WESTON/ARCS 1992). Several unpaved roads wind around the property and an asphalt driveway leads from Cambridge Street directly to the larger operations building (Figure 2). Two concrete pads are located on the property which were formerly occupied by buildings. No other paved areas were observed on-site. During the WESTON/ARCS on-site reconnaissance, three storage trailers holding drummed waste and a 30 cubic yard roll-off dumpster storing contaminated soil were observed adjacent to the garage (WESTON/ARCS 1992).

Table 1 presents identified structures or areas on the Burt property that are potential sources of contamination, the containment factors associated with each source, and the relative location of each source. Source areas listed below include those which were removed after the approval date of the Burt Company Site Inspection Task Work Plan (ME DEP 1990e; WESTON/ARCS 1991).

Table 1

Source Evaluation

Potential Source Area	Containment Factors	Spatial Location
Drummed Waste*	Overpacked drums	Secured in locked trailer on-site
Contaminated Soil*	Covered roll-off	Secured in covered roll-off on-site
Contaminated Soil	None	Surrounding operations buildings
Debris Piles	None	Adjacent to Milliken Brook and garage

*Source removed during ME DEP removal operations ending June 10, 1992.

Three storage trailers located northeast of the main operations building reportedly contained 180 overpacked drums which were temporarily staged until final disposal arrangements could be made by ME DEP (WESTON/ARCS 1992) (Figure 2). The overpacked drums contained various dyes, pigments, and inorganic materials used in the production of poker chips and billiard balls as well as other assorted wastes resulting from vandalism and fire. The drummed waste was transported off-site during ME DEP removal operations occurring in May and June 1992 (ME DEP 1992).

The WESTON/ARCS team also observed a 30 cubic yard covered roll-off dumpster reportedly containing contaminated soil (WESTON/ARCS 1992). According to ME DEP, a total of 45 cubic yards of contaminated soil were scraped from the site after vandals spread various powdered dyes and lead monosilicate in and around the operations buildings and garage (ME DEP 1991b). Visually contaminated soils were collected and temporarily staged in the dumpster by ME DEP until final disposal arrangements could be made. ME DEP removed the contaminated soil on June 10, 1992 (WESTON/ARCS 1992).

During the on-site reconnaissance, WESTON/ARCS observed a suspected area of soil contamination measuring approximately 200 square feet adjacent to and north of the feeder brook which flows through the property (WESTON/ARCS 1992) (Figure 2). There were several localized depressions in this area which were caused by fill material settling over natural soils creating sink-holes (WESTON/ARCS 1992). Soil sampling of the area revealed a two-inch soil cover underlain by approximately ten inches of poker chips and cut-outs (WESTON/ARCS 1992). The cut-outs are reportedly made of barium compounds and contain various dyes (Kendall 1991c). The WESTON/ARCS team also observed trace amounts of dye in soils around the main operations building (WESTON/ARCS 1992). The dyes were observed in localized areas at depths ranging from surface to six inches. Surface soil staining was also present in front of the garage where an area measuring approximately 25 square feet was saturated with petroleum products which were stored in the garage. Another stained area was observed south of the main operations building which measured approximately 200 square feet. The area received seepage from the feeder brook which flows southeast under the operations building and was similar in color to the sediments of the tributaries on-site. No file information was available reporting spills or releases of hazardous substances prior to 1989 when the property was abandoned. According to file information, releases occurring on the property after 1989 were the result of vandalism (ME DEP 1990a, 1991a).

From 1989 to 1990, three fires occurred on-site resulting in the destruction of both operations buildings and the office building (ME DEP 1991a). No information was available in State files describing the fires or the containment measures implemented by the Portland Fire Department (PFD) to prevent water from entering the feeder brook or Milliken Brook during the fires. However, according to ME DEP, the fires did not involve the powdered dyes and lead monosilicate which were stored primarily in the garage. During ME DEP removal operations, charred material and building debris were stockpiled adjacent to the garage to facilitate removal operations. Other piles were observed on the south side of the property adjacent to Milliken Brook measuring approximately 75 cubic yards. These piles contained construction debris, household appliances, and charred material (WESTON/ARCS 1992).

No National Priority List sites are located within a one-mile radius of the site. Merill Transport Company, Inc. was the only site listed in the CERCLIS database located within one mile of the Burt Company site as of June 16, 1992 (EPA 1992). They are located at 1037 Forest Avenue, Portland, Maine and operate a bulk oil distribution facility with salt and coal storage operations on-site (Merkl 1992b). Merill Transport Company, Inc. also owns unoccupied property which bounds the Burt site to the northwest. There are approximately 13 RCRA notifiers, listed in the Generators by Town report as of May 13, 1991, which are located within a one-mile radius of the site (EPA 1991a). The dates provided indicate the printing date of the respective lists.

SITE ACTIVITY/HISTORY

According to site files, the Portland Billiard Ball Corporation, owned and operated by the Burt family, began operating at the site in 1895 and later changed the business name to

Burt Company. The Burt Company operated as a billiard ball manufacturing plant before expanding operations to the manufacture of clay casino gaming chips. The company used both compression molding manufacturing and injection molding processes for both gaming chips and billiard balls (Kendall 1991a; ME DEP 1991a).

Mr. Arthur Girard purchased the property from the Burt family in December 1984 and continued to operate under the Burt Company name manufacturing casino gaming chips and billiard balls until 1985 (ME DEP 1991a).

The Brothers Corporation, owned by Mr. John Kendall and Ms. Sherman Kendall, purchased the site in 1985 from Mr. Girard. The sale of the property included the existing manufacturing equipment and inventory including approximately 4,000 pounds of lead monosilicate (PPH 1991; ROD 1985; Kendall 1991a). Lead monosilicate is a white powder which was used as a primary filler in the manufacturing process of billiard balls and gaming chips. The former Burt Company discontinued its use following the release of worker safety health hazard reports concerning lead. The Brothers Corporation manufactured clay compression molded casino gaming chips until 1988 also under the Burt Company name. In 1988, the company was reorganized as CHIPCO International, Inc. when they developed a new product line of casino gaming chip referred to as the Pro-Tech Series. This manufacturing process utilized off-site injection molding manufacturing and printing. Subsequently, most of the old compression molding manufacturing equipment, inventory, and materials at 1 Cambridge Street were sold to Mr. Girard of Atlantic Molding, Inc. (Kendall 1991a).

R.F. Investment Trust, formed by Mr. Norman Reef and Mr. Raymond Reef, purchased the site in May 1988 (ROD 1988). The property was leased to Bekor Industries, Inc., an asbestos abatement firm, from August 1989 to October 1989 when the first of three fires destroyed the building they were leasing (ME DEP 1991a). The property has remained abandoned since Bekor Industries, Inc. vacated the site.

The raw materials formerly used on-site by the Portland Billiard Corporation, Burt Company, and Brothers Corporation include many hazardous and non-hazardous substances as defined under Title 40, Part 261 of the Code of Federal Regulations. Pigments and filler materials containing lead, antimony, cobalt, zinc, nickel, chromium, cadmium, and barium compounds were commonly used in past manufacturing operations at the site. Other materials used on-site include Aqua Treat, a brand name boiler treatment containing sodium hydroxide and morpholine, and TEK-SOL, a solvent composed mainly of aromatic hydrocarbons. Many of these substances, including those listed as non-hazardous under RCRA, exhibit toxic characteristics and cause respiratory irritation when exposed to fire (MSDS 1991).

Table 2 summarizes the types of potentially hazardous substances which have been disposed, used or stored on the Burt property.

Table 2

Hazardous Waste Quantity

Substances	Quantity	Years of Use	Years of Disposal	Source Area
Solvent and Treatment	Unknown	1895 to 1988	Not applicable	Not applicable
Pigments and dyes	Unknown	1895 to 1988	1988	Soil and containers

In November 1989, a fire destroyed the operations building and the office building at the Burt property (ME DEP 1991a). In March 1990, the PFD responded to a smaller fire involving a drum of TEK-SOL which was reportedly set by vandals. The PFD observed much of the property vandalized with various chemicals released to the environment and subsequently contacted ME DEP regarding the situation at the site (ME DEP 1991d). The ME DEP sent two notifications to the property owner, Mr. Norman Reef, to secure the site and clean up wastes which posed a hazard to public health and the environment (ME DEP 1991d). Mr. Norman Reef contracted for the installation of a fence to prevent vehicular access to the property but failed to demonstrate his intention to the ME DEP to remediate the site. Background file information emphasized the presence of children routinely playing at the site and homeless persons using the abandoned buildings for shelter (ME DEP 1990h).

On March 23, 1990, ME DEP collected samples from spilled bags of lead monosilicate and dye (ME DEP 1990c). The lead monosilicate sample was analyzed for Extraction Procedure Toxicity (EP TOX) lead and the dye sample was analyzed for total metals and EP TOX metals. Analytical results in the two samples revealed concentrations of barium and lead exceeding regulatory limits under Title 40 Part 261 of the Code of Federal Regulations and were classified as hazardous waste by ME DEP. In May 1990, ME DEP contracted LRS Enviro-Services, Inc. (LRS) to secure and stage the hazardous wastes at the site. LRS performed site work from May 23, 1990 to June 7, 1990 stockpiling approximately 45 cubic yards of contaminated soil and 180 overpacked drums (LRS 1990a; ME DEP 1991b). The wastes were temporarily staged on-site until ME DEP could make final disposal arrangements. In December 1990, ME DEP completed a Preliminary Assessment report of the Burt site which summarized existing site conditions and ME DEP progress with removal operations (ME DEP 1990h). Based on existing site conditions, the ME DEP recommended a high priority Screening Site Inspection.

On April 4, 1991, Mr. John Kendall transported approximately 32 drums of waste billiard balls, which the ME DEP had previously overpacked, to the Portland Regional Waste System (RWS) facility for incineration. Mr. Kendall transported the waste without prior ME DEP approval and did not inform the RWS of the potential lead contamination associated with the waste (ME DEP 1991c). According to ME DEP, the RWS facility is not licensed to treat, handle or dispose of hazardous wastes.

On April 12, 1991, the ME DEP designated the Burt site an uncontrolled hazardous substance site and declared Mr. Norman Reef, Mr. Raymond Reef, Mr. John Kendall, Ms. Sherman Kendall, Mr. Girard, Burt Company, Inc., Brothers Corporation, Inc., CHIPCO International, Inc., and R.F. Investment Trust as responsible parties for clean-up costs incurred by ME DEP (ME DEP 1991c). In late April 1991, ME DEP directed LRS to inventory the drummed waste staged on-site and collect samples for disposal considerations. LRS also mobilized several trailers and a 30 cubic yard roll-off dumpster to store the overpacked waste and contaminated soil in a more secure manner (ME DEP 1991b).

In 1991, the Portland Water District (PWD) reported elevated cadmium levels at the wastewater treatment plant serving northwest Portland. The source of the cadmium was suspected to originate at the Burt site or the adjacent property, owned by Merill Transport Company, Inc. In November 1991, the PWD sampled the feeder brook and Milliken Brook for total cadmium. The analytical data reported low levels of cadmium in both sediment and aqueous samples. PWD concluded that the Burt site was not the cause for elevated cadmium at the wastewater treatment plant (PWD 1992).

In May 1992, ME DEP directed LRS to subcontract Michigan Disposal, Inc. for the disposal of stockpiled soil and overpacked wastes; Jet-Line Services, Inc. for 3,500 gallons of No. 2 and No. 6 heating fuel; General Chemical, Inc. for the disposal of various flammable oil and water mixtures; and Frontier Chemical Waste Process, Inc. for the disposal of alkaline and ethyl alcohol waste solutions (Envotech 1992; Jet-Line 1992; GCI 1992; Frontier 1992).

The Burt Company does not hold a National Pollution Discharge Elimination System permit (EPA 1991b). The Burt Company was listed as a RCRA notifier, with identification number MED001096353, in the Generator's by Town report as of May 13, 1991 (EPA 1991a). No file information was available to document Federal or local regulatory violations at the site.

WESTON/ARCS conducted an on-site reconnaissance on May 7, 1992 and surface soil and sediment sampling on June 10, 1992 at the Burt site. Six soil samples and six sediment samples were collected at ten locations, including reference and duplicate samples. During the sampling trip, WESTON/ARCS detected elevated concentrations of volatile organics on a Foxboro Model 128 organic vapor analyzer (OVA) at eight locations on-site. Soil at sampling location SS-03/04 south of the main operations building, in an area of stained soil and leachate, revealed the highest concentrations on-site at 600 parts per million. WESTON/ARCS recorded elevated OVA readings at other locations on-site from 5 parts per million to 120 parts per million (WESTON/ARCS 1992). Compounds detected in samples collected by WESTON/ARCS may contribute to the high OVA reading but do not entirely account for the concentrations detected. Other possible sources of these readings include naturally occurring organic vapors which the OVA can not distinguish from anthropogenic vapors.

ENVIRONMENTAL SETTING

Land use within one-half mile of the Burt site is generally characterized by residential development to the north and industrial development to the east, south, and west (WESTON/ARCS 1992; USGS 1978) (Figure 1). The nearest occupied residence is located approximately 85 feet northeast of the site on Cambridge Street (Figure 2). The nearest groundwater well is a private drinking water well located in the Town of Scarborough approximately five miles southwest of the site.

Surficial geology in the vicinity of the Burt site consists of glaciomarine deposits which are a mixture of sand, silt, clay, and minor amounts of gravel. The mixture is commonly a clayey silt with sand dominant in some places, but may be underlain by finer-grained sediments. This particular map unit may also include small areas of till and other units that are not completely covered by marine sediments (MGS 1985b). During the on-site reconnaissance, the WESTON/ARCS team generally encountered fine to medium course sand, silt and clay. However, at sample location SS-05, which was believed to be an undisturbed area topographically higher than the rest of the site, a uniform layer of gray clay was encountered from the surface to a depth of 10 inches (WESTON/ARCS 1992).

Bedrock in the vicinity of the Burt site is Silurian-Ordovician in age and composed of the Vassalboro Formation which consists of calcareous sandstone, interbedded sandstone, and impure limestone (MGS 1985a). Several faults are known to occur in the area including one located approximately one mile east of the site adjacent to Back Cove Bay; one located approximately one mile northeast along the Falmouth coast; and another located two miles west along the Presumpscot River. The Back Cove Bay fault and the Presumpscot fault run southwest to northeast and are classified as high angle normal or reverse faults. The Falmouth fault also runs southwest to northeast but is classified as a thrust fault which barbs on the upper plate (MGS 1985a). The depth to bedrock and groundwater, presence of fracturing, and groundwater flow direction in the vicinity of the Burt site could not be determined from available file information.

No public or private groundwater wells are located within four miles of the Burt site (Steuer 1991a, 1991b, 1991c, 1991d, 1991e). The closest public water supply source to the site is Sabago Lake which supplies the greater Portland area with municipal water. Sabago Lake is located in the Town of Standish approximately 12 miles northwest of the site. There are no known surface water intakes along the 15-mile downstream pathway (USGS 1975, 1978).

The topography on-site slopes to the east toward the wetland area which bounds the property to the east and northeast (WESTON/ARCS 1992). Overland flow from the site is directed into a feeder brook and Milliken Brook which travels through the property to the wetland (Figure 2). Topographic maps depict overland flow to continue through the wetland one-half mile to an unnamed tributary. The 15-mile surface water pathway then continues approximately one-half mile east along the tributary to Back Cove, one mile southeast to Casco Bay, and 10 miles southeast to the Atlantic Ocean where it continues in an arc for the remainder of the 15-mile surface water pathway. The arc which delineates the downstream pathway in Casco Bay and the Atlantic Ocean includes points north up to

Wolf Neck State Park in South Freeport, Maine and south to Ferry Beach State Park in Saco, Maine (USGS 1975, 1978). Several islands are location within the arc along the 15-mile downstream pathway including Peaks Island, Long Island, Great Chebeague Island, Great Diamond Island, Cushing Island, and Ram Island. The floodplain classification for the site could not be determined from available file information. The site receives an average of 42.6 inches of precipitation per year (Merkl 1992c).

The small tributaries leading from the site to Back Cove may be used for recreational fishing. Casco Bay is primarily utilized for commercial shipping and recreational boating. Commercial shellfishing of bi-valved benthic organisms is not permitted in localized areas along the shoreline north and east of Portland and the inshore areas of Casco Bay from Cape Elizabeth to Portland due to petroleum and bacteria contaminated sediments (Dresser 1989; Merkl 1992d). Commercial shellfishing is permitted in eastern portions of Casco Bay and the inshore areas of the Atlantic Ocean which are within the 15-mile downstream pathway. Commercial and recreational fishing and lobster catching are not restricted along the 15-mile surface water pathway. Public beaches are located along the shoreline of the 15-mile downstream surface water pathway in South Portland, Cape Elizabeth and the offshore islands (USGS 1975, 1978). These beaches are found along Cascade Bay and the Atlantic Ocean and include Willard Beach, Big Beach, Little Beach, West Shore Sandy Beach, Crescent Beach, Andrews Beach, and East End Beach.

The Maine Natural Heritage Program indicated that no State-listed rare, threatened or endangered species of plants, animals, natural communities or critical areas under their jurisdiction are known to occur in the vicinity of the Burt site (ME NHP 1991). The U.S. Department of Interior, Fish and Wildlife Service indicated that no Federally-listed or proposed endangered or threatened species under their jurisdiction are known to occur within a 4-mile radius of the site or along the 15-mile downstream pathway with the exception of occasional transient endangered bald eagles and peregrine falcons (US DOI 1992). A one-acre wetland area bounds the property to the east and northeast and continues approximately one-half mile along the 15-mile downstream pathway (WESTON/ARCS 1992).

RESULTS

In March 1990, ME DEP collected samples from spilled bags of lead monosilicate and dye. The lead monosilicate sample was analyzed for EP TOX lead and the dye sample was analyzed for total metals and EP TOX metals. Analytical results for EP TOX revealed lead at 7,700 parts per million (ppm) and barium at 3,600 ppm (ME DEP 1990c). In May 1990, ME DEP collected soil samples in front of the garage and under floorboards in the garage which revealed o & p dichlorobenzene at 211 ug/kg and EP TOX lead at 4,391 ppm (LRS 1990b). Post-removal soil samples collected in front of the garage were analyzed for EP TOX and total metals. The analytical results for EP TOX detected concentrations of lead at 0.20 ppm and barium at 1.9 ppm (ME DEP 1990g). Table 3 summarizes maximum values obtained by ME DEP for soil and waste material samples collected during removal activities at the site (LRS 1990b; ME DEP 1990c, 1990g).

Table 3

Summary of ME DEP Analytical Results
March 1990 to September 1990

Element/Compound	March 1990	May 1990	September 1990
Silver	1.9 mg/kg	NA	0.02 mg/kg
Arsenic	15 mg/kg	NA	3 mg/kg
Cadmium	4,200 mg/kg	NA	0.27 mg/kg
Chromium	46,000 mg/kg	NA	9.35 mg/kg
Lead	92 mg/kg	NA	190 mg/kg
Mercury	0.3 mg/kg	ND	ND
Nickel	35 mg/kg	NA	ND
Selenium	ND	NA	ND
Barium	92,000 mg/kg	NA	3,400 mg/kg
o & p Dichlorobenzene	NA	211 ug/kg	ND
Barium (EP TOX)	3,600 ppm	0.9 ppm	1.9 ppm
Cadmium (EP TOX)	0.47 ppm	0.03 ppm	ND
Chromium (EP TOX)	0.02 ppm	ND	ND
Lead (EP TOX)	7,700 ppm	4,391 ppm	0.2 ppm

mg/kg = milligrams per kilogram.
NA = Not analyzed.
ND = Not detected.
ppm = parts per million.
ug/kg = micrograms per kilogram.

In November 1990, the PWD collected samples at the Burt site to determine if sources on-site were causing elevated cadmium levels at the Portland wastewater treatment facility. Analytical results of the samples reported cadmium at a maximum concentration of 0.001 mg/L in surface water and 0.3 mg/kg in sediments (PWD 1992).

The WESTON/ARCS team conducted surface soil and sediment sampling on June 10, 1992 at the Burt site (Table 4). Six soil samples and six sediment samples were collected at 10 locations, including reference and duplicate samples. WESTON/ARCS collected a field equipment rinsate sample using High Purity Liquid Chromatography (HPLC) water and deionized water after collecting sediment samples from location SD-08. A trip blank

Table 4

Sample Summary: Burt Company
Samples Collected by WESTON/ARCS on June 10, 1992

Sample Location	Matrix	Traffic Report Nos.	Time Collected	Remarks	Sample Depth	Sample Source
SS-01	Soil	AAR75 MAT120	11:40	Grab	8 to 15 inches	Depressed area containing plastic waste adjacent to the feeder brook
SS-02	Soil	AAR76 MAT121	12:00	Grab	4 to 10 inches	Former dye pile adjacent to garage
SS-03	Soil	AAR77 MAT122	12:30	Grab	4 to 10 inches	South of main operations building, area of surface staining and leachate
SS-04	Soil	AAR78 MAT123	12:30	Grab	4 to 10 inches	Duplicate of SS-03 for quality control
SS-05	Soil	AAR79 MAT124	13:00	Grab	4 to 10 inches	Grassed area upgradient of site presumed to be undisturbed
SD-06	Sediment	AAR80 MAT125	10:55	Grab	2 to 8 inches	Upstream along Milliken Brook at point of entry onto site
SD-07	Sediment	AAR81 MAT126	10:30	Grab	2 to 8 inches	Downstream along Milliken Brook prior to convergence with feeder brook
SD-08	Sediment	AAR82 MAT127	11:10	Grab	2 to 8 inches	Upstream along feeder brook at point of entry onto site (MS/MSD for quality control)
SD-09	Sediment	AAR83 MAT128	10:00	Grab	2 to 8 inches	Downstream along feeder brook prior to convergence with Milliken Brook
SD-10	Sediment	AAR84 MAT129	10:00	Grab	2 to 8 inches	Duplicate of SD-09 for quality control
SD-11	Sediment	AAR85 MAT130	09:40	Grab	2 to 8 inches	In wetland area east of site along surface water pathway

Table 4

Sample Summary: Burt Company
Samples Collected by WESTON/ARCS on June 10, 1992
(Concluded)

Sample Location	Matrix	Traffic Report Nos.	Time Collected	Remarks	Sample Depth	Sample Source
RB-12	Aqueous	AAR86 MAT131	11:30	Grab	N/A	Sampling equipment rinsate blank for quality control
TB-13	Aqueous	AAR87	07:30	Grab	N/A	Trip blank for quality control
SS-14	Soil	ABR54 MAZ838	14:00	Grab	4 to 10 inches	Former dye pile adjacent to feeder brook

MS/MSD = Matrix Spike/Matrix Spike Duplicate.
N/A = Not applicable.

sample, prepared with HPLC water, was also included for volatile organic compounds. The samples were collected in accordance with the protocols outlined in the WESTON/ARCS Task Work Plan for On-site Reconnaissance and Soil and Sediment Sampling, and analyzed by U.S. EPA Contract Laboratory Program (CLP) laboratories (WESTON/ARCS 1991). A change in the Task Work Plan regarding sampling locations occurred due to the location of potential source areas identified during the on-site reconnaissance. The revised sampling locationsare presented in Table 4 and shown in Figure 2. Complete analytical results of the WESTON/ARCS sampling activities including quantitation and detection limits are presented in Attachment A. Sample results qualified with a "J" on the analytical tables are considered approximate because of limitations identified during the CLP data validation. In addition, organic sample results reported at concentrations below quantitation limits and confirmed by mass spectrometry are also qualified by a "J" and considered approximate.

Table 5 is a summary of compounds and elements detected through CLP analyses of WESTON/ARCS samples. For each sample location, a compound or element is listed on Table 5 if it was detected at three times or greater than the reference sample concentration. Compounds or elements which occurred at a concentration three times or greater than the reference concentration are designated by their approximate relative concentration above the reference value. However, if the element or compound was not detected in the reference sample, that sample's quantitation limit (for organic analyses) or detection limit (for inorganic analyses) was used as the reference value. These compounds or elements are listed on Table 5 if they occurred at a value equal to or greater than that location's sample quantitation limit or sample detection limit. Compounds whose detected concentrations were less than three times the sample quantitation limit or sample detection limit are listed simply as "Detected."

Table 5

Sample Results Summary
Burt Company
(samples collected by WESTON/ARCS on June 10, 1992)

Sample Location	Compound/Element	Concentration	Reference Concentration	Comments
SS-01 (MAT120)	Mercury	1.4 mg/kg	0.02 mg/kg SDL	70 times SDL
SS-02 (AAR76)	Fluoranthene	210 ug/kg J	20 ug/kg J	10 times REF
	Pyrene	200 ug/kg J	17 ug/kg J	11 times REF
SS-03 (AAR77) (MAT122)	Di-n-butylphthalate	1,300 ug/kg	430 ug/kg SQL	3 times SQL
	Fluoranthene	390 ug/kg J	20 ug/kg J	19 times REF
	Pyrene	190 ug/kg J	17 ug/kg J	11 times REF
	bis(2-ethylhexyl)phthalate	1,200 ug/kg J	430 ug/kg SQL	Detected
	4,4'- DDE	11 ug/kg J	4.3 ug/kg SQL	Detected
	4,4'- DDD	7.4 ug/kg J	4.3 ug/kg SQL	Detected
	4,4'- DDT	14 ug/kg	4.3 ug/kg SQL	3 times SQL
	Arsenic	31.8 mg/kg	7.6 mg/kg	4 times REF
	Barium	6,900 mg/kg	98.2 mg/kg	70 times REF
	Copper	581 mg/kg	21.3 mg/kg	27 times REF
	Lead	2,230 mg/kg	17.5 mg/kg	127 times REF
	Mercury	0.29 mg/kg	0.02 mg/kg SDL	14 times SDL
	Sodium	441 mg/kg	8.9 mg/kg SDL	49 times SDL
	Vanadium	442 mg/kg	54.7 mg/kg	8 times REF
	Zinc	680 mg/kg J	2.1 mg/kg SDL	323 times SDL
SS-04 (AAR78) (MAT123)	2-butanone	16 ug/kg J	14 ug/kg SQL	Detected
	Di-n-butylphthalate	1,700 ug/kg	440 ug/kg SQL	3 times SQL
	Fluoranthene	250 ug/kg J	20 ug/kg J	12 times REF
	Pyrene	110 ug/kg J	17 ug/kg J	6 times REF
	bis(2-ethylhexyl)phthalate	660 ug/kg J	440 ug/kg SQL	Detected
	4,4'- DDE	8.9 ug/kg J	4.4 ug/kg SQL	Detected
	4,4'- DDD	5.4 ug/kg	4.4 ug/kg SQL	Detected

Table 5

Sample Results Summary
Burt Company
(samples collected by WESTON/ARCS on June 10, 1992)
(Continued)

Sample Location	Compound/Element	Concentration	Reference Concentration	Comments
SS-04 (Concluded)	4,4'- DDT	9.5 ug/kg J	4.4 ug/kg SQL	Detected
	Arsenic	33.6 mg/kg	7.6 mg/kg	4 times REF
	Barium	5,900 mg/kg	98.2 mg/kg	60 times REF
	Copper	539 mg/kg	21.3 mg/kg	25 times REF
	Lead	1,600 mg/kg	17.5 mg/kg	91 times REF
	Mercury	0.32 mg/kg	0.03 mg/kg SDL	10 times SDL
	Sodium	157 mg/kg	8.7 mg/kg SDL	18 times SDL
	Vanadium	411 mg/kg	54.7 mg/kg	7 times REF
	Zinc	661 mg/kg J	2.1 mg/kg SDL	314 times SDL
SD-07 (AAR81) (MAT126)	Heptachlor	2.4 ug/kg J	2.4 ug/kg SQL	Detected
	4,4'- DDD	28 ug/kg J	4.6 ug/kg SQL	6 times SQL
	Aroclor 1260	350 ug/kg	46 ug/kg SQL	7 times SQL
	Arsenic	6.2 mg/kg	0.7 mg/kg SDL	8 times SDL
SD-10 (AAR84)	Dieldrin	4.1 ug/kg J	4.1 ug/kg SQL	Detected
SD-11 (MAT130)	Aluminum	30,800	7,790 mg/kg	3 times REF
	Arsenic	10.8	0.70 mg/kg SDL	15 times SDL
	Chromium	64.4	17.9 mg/kg	3 times REF
	Cobalt	20.5	4.8 mg/kg	4 times REF
	Iron	43,900	9,050 mg/kg	4 times REF
	Magnesium	11,300	2,380 mg/kg	4 times REF
	Manganese	608 J	118 mg/kg J	5 times REF
	Potassium	9,910	1,200 mg/kg	8 times REF
	Thallium	0.42	0.28 mg/kg SDL	Detected
	Vanadium	76.8	19.9 mg/kg	3 times REF

Table 5

Sample Results Summary
Burt Company
(Concluded)

REF	= Reference Concentration.
SDL	= Sample Detection Limit.
SQL	= Sample Quantitation Limit.
J	= Quantitation is approximate due to limitations identified during the quality control review.
Detected	= Compound was detected in the sample; concentration does not exceed three times the reference value, sample quantitation limit, or sample detection limit.
ug/kg	= Micrograms per kilogram.
mg/kg	= Milligrams per kilogram.

Several reference samples were used for comparison with soil samples collected at source areas and sediment samples collected downstream of source areas. Soil samples were compared to reference sample SS-05. Downstream sediment samples along Milliken Brook and the feeder brook were compared to their respective upstream reference sediment sample. Sample SD-11, collected in the wetland area, was compared to sediment sample SD-06 which had a greater concentration of elements than sediment sample SD-08.

The compound 2-butanone (a.k.a. methyl ethyl ketone) was the only volatile organic compound detected above the reference concentration in soil and sediment samples collected by WESTON/ARCS on June 10, 1992. A total of four semi-volatile organic compounds (SVOCs), five pesticides, one polychlorinated biphenyl, and 16 inorganic elements were also detected through CLP analyses. The presence of elevated SVOCs and pesticides were relatively high at sample locations SD-07 with lower concentrations of these compounds present at the other sample locations. The detected SVOCs are polynuclear aromatics and support the use of TEK-SOL which is composed of these compounds. The use of pesticides and Aroclor 1260 could not be linked with past manufacturing operations but were observed only at sediment locations and at soil sample location SS-03, which receives seepage from the feeder brook flowing under the main operations building. Analytical data suggests that pesticide and polychlorinated biphenyl (PCB) compounds documented on-site may be caused by sources upstream from the site.

There were 15 elements which revealed concentrations more than three times the reference value. The presence of inorganic elements with concentrations significantly exceeding the reference value appeared to be relatively low at most sample locations with the exception of barium, copper, lead, mercury, and zinc. On-site soils and sediments revealed concentrations of barium up to 70 times the reference value, copper up to 27 times the reference value, lead up to 127 times the reference value, mercury up to 70 times the sample detection limit, and zinc up to 323 times the sample detection limit. The highest concentration of inorganic elements occurring above the reference value was reported at sample location SS-03, collected approximately 15 feet south of the main operations building. The detection of these elements is consistent with former manufacturing operations at the site and supports the documented use of pigments and fillers composed of lead, antimony, cobalt, zinc, nickel, chromium, cadmium, and barium compounds.

SUMMARY

The Burt Company site is located at 1 Cambridge Street in Portland, Cumberland County, Maine. The site is approximately 3.1 acres and corresponds to the Portland Tax Assessor's map 151-A, lot 13. The Portland Billiard Ball Corporation began operating at the site in 1895 and later changed its name to Burt Company. The Burt Company operated as a billiard ball manufacturing plant before expanding operations to the manufacture of clay casino gaming chips. The company used both compression molding manufacturing and injection molding to produce both gaming chips and billiard balls. The property had three subsequent owners after the Burt family, including Mr. Arthur Girard; the Brothers Corporation, owned by Mr. John Kendall and Ms. Sherman Kendall; and R.F. Investment Trust, formed by Mr. Norman Reef and Mr. Raymond Reef. The facility continued to operate under the Burt Company name manufacturing casino gaming chips and billiard balls until R.F. Investment Trust purchased the property in 1988. The Burt Company site has remained abandoned since 1989 when three fires occurred destroying several buildings on-site.

The raw materials formerly used on-site by the Portland Billiard Corporation, Burt Company, and Brothers Corporation include many hazardous and non-hazardous substances as defined under Title 40 Part 26 of the Code of Federal Regulations. Pigments and filler materials containing lead, antimony, cobalt, zinc, nickel, chromium, cadmium, and barium compounds were commonly used in past manufacturing operations at the site. Other materials used on-site include Aqua Treat, a brand name boiler treatment containing sodium hydroxide and morpholine, and TEK-SOL, a solvent composed of polynuclear aromatic compounds. Many of these substances, including those which are non-hazardous, exhibit toxic characteristics and cause respiratory irritation when exposed to fire.

The compound 2-butanone was the only volatile organic compound detected above the reference concentration in soil and sediment samples collected by the Roy F. Weston, Inc. Alternative Remedial Contract Strategy (WESTON/ARCS) on June 10, 1992. A total of four semi-volatile organic compounds (SVOCs), five pesticides, one polychlorinated biphenyl, and 16 inorganic elements were also detected through U.S. EPA Contract Laboratory Program analyses. The presence of elevated SVOCs and pesticides were relatively high at sample locations SD-07 with lower concentrations of these compounds present at the other sample locations. The detected SVOCs are polynuclear aromatics and support the on-site use of solvents containing these compounds.

There were 15 elements which revealed concentrations more than three times the reference value in soil and sediment samples. The presence of inorganic elements with concentrations significantly exceeding the reference value appeared to be relatively low at most sample locations with the exception of barium, copper, lead, mercury, and zinc. The highest concentration of inorganic elements occurring above the reference value was reported at sample location SS-03, collected approximately 15 feet south of the main operations building. The detection of these elements is consistent with former manufacturing operations at the site and supports the documented use of pigments and fillers composed of lead, antimony, cobalt, zinc, nickel, chromium, cadmium, and barium compounds.

The topography on-site slopes to the east toward a wetland area which bounds the property. Overland flow from the site is directed into a feeder brook and Milliken Brook which travel through the property to the wetland. Topographic maps depict overland flow to continue through the wetland approximately one-half mile to an unnamed tributary. The unnamed tributary then flows approximately one-half mile to Casco Bay, and two miles southeast to the Atlantic Ocean where it completes the 15-mile surface water pathway. The site receives an average of 42.6 inches of precipitation per year.

The Maine Natural Heritage Program indicated that no State-listed rare, threatened or endangered species of plants, animals, natural communities or critical areas under their jurisdiction are known to occur in the vicinity of the Burt Company site. The U.S. Department of Interior, Fish and Wildlife Service indicated that no Federally-listed or proposed endangered or threatened species under their jurisdiction are known to occur within a four-mile radius of the site or along the 15-mile downstream pathway with the exception of occasional transient endangered bald eagles and peregrine falcons. A one-acre wetland area bounds the property to the east and northeast and continues approximately one-half mile along the 15-mile downstream pathway.

No public or private groundwater wells are located within four miles of the Burt Company site. The nearest groundwater well is a private drinking water well located in the Town of Scarborough approximately five miles southwest of the site. The closest public water supply source to the site is Sabago Lake which supplies the greater Portland area with municipal water. Sabago Lake is located in the Town of Standish approximately 12 miles northwest of the site. There are no known surface water intakes along the 15-mile downstream pathway.

Submitted by:

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Attachment A

WESTON/ARCS Analytical Results including Sample Quantitation and Instrument Detection Limits

Soil and Sediment Samples Collected June 10, 1992

- **CLP Volatile Organic Analysis with Sample Quantitation Limits; Soil and Aqueous Analytical Results (ug/kg)**
- **CLP Semi-volatile Organic Analysis with Sample Quantitation Limits; Soil and Aqueous Analytical Results (ug/kg)**
- **CLP Pesticide/PCB Analysis with Sample Quantitation Limits; Soil and Aqueous Analytical Results (ug/kg)**
- **CLP Inorganic Analysis with Instrument Detection Limits, Soil and Aqueous Analytical Results (mg/kg)**

Notes:

J	=	The associated numerical value is an estimated quantity.
R	=	Rejected data due to the quality control criteria. The data are unusable; the compound may or may not be present.
U	=	The compound was analyzed for; but was not detected. The associated numerical value is the sample quantitation limit.
UJ	=	The compound was analyzed for; but was not detected. The sample quantitation limit is an estimated quantity.

Semivolatile Soil Analysis
(ug/Kg)

SITE: BURT COMPANY

CASE: 18284 SDG: AAR75

SAMPLE NUMBER:		AAR75	AAR76	AAR77	AAR78	AAR79	AAR80	AAR81	AAR82	AAR83	AAR84	AAR85	ABR54	AAR86
SAMPLE LOCATION:		SS-01	SS-02	SS-03	SS-04	SS-05	SD-06	SD-07	SD-08	SD-09	SD-10	SD-11	SS-14	RB-12
LABORATORY NUMBER:		0847001	0847002	0847003	0847004	0847005	0847006	0847007	0847008	0847009	0847010	0847011	0847014	0847012
COMPOUND	CRQL													
Dibenzofuran	330	380 U	360 U	23 J	440 U	400 U	34 J	66 J	120 J	410 U	410 U	470 U	380 U	10 U
2,4-Dinitrotoluene	330	380 U	360 U	430 U	440 U	400 U	520 U	460 U	420 UJ	410 U	410 U	470 U	380 U	10 U
Diethylphthalate	330	380 U	360 U	430 U	440 U	400 U	520 U	460 U	420 UJ	410 U	410 U	470 U	380 U	10 U
4-Chlorophenyl-Phenylether	330	380 U	360 U	430 U	440 U	400 U	520 U	460 U	420 UJ	410 U	410 U	470 U	380 U	10 U
Fluorene	330	380 U	360 U	430 U	440 U	400 U	520 U	460 U	70 J	410 U	410 U	470 U	380 U	10 U
4-Nitroaniline	800	930 U	880 U	1000 U	1100 U	980 U	1300 U	1100 U	1000 UJ	990 U	1000 U	1100 U	920 U	26 U
4,6-Dinitro-2-Methylphenol	800	930 U	880 U	1000 U	1100 U	980 U	1300 U	1100 UJ	1000 UJ	990 U	1000 U	1100 U	920 U	26 U
N-nitrosodiphenylamine(1)	330	380 U	360 U	430 U	440 U	400 U	520 U	460 U	22 J	410 U	410 U	470 U	380 U	10 U
4-Bromophenyl-Phenylether	330	380 U	360 U	430 U	440 U	400 U	520 U	460 U	420 UJ	410 U	410 U	470 U	380 U	10 U
Hexachlorobenzene	330	380 U	360 U	430 U	440 U	400 U	520 U	460 U	420 UJ	410 U	410 U	470 U	380 U	10 U
Pentachlorophenol	800	930 U	880 U	1000 U	1100 U	980 U	1300 U	1100 UJ	1000 UJ	990 U	1000 U	1100 U	920 U	26 U
Phenanthrene	330	30 J	140 J	380 J	220 J	400 U	430 J	980 U	110 J	66 J	100 J	44 J	380 U	10 U
Anthracene	330	380 U	29 J	54 J	45 J	400 U	83 J	150 J	21 J	410 U	410 U	470 U	380 U	10 U
Carbazole	330	380 U	360 U	60 J	440 U	400 U	110 J	150 J	420 UJ	410 U	410 U	470 U	380 U	10 U
Di-n-butylphthalate	330	380 U	360 U	1300	1700	400 U	520 U	460 U	420 UJ	410 U	410 U	470 U	380 U	10 U
Fluoranthene	330	32 J	210 J	390 J	250 J	20 J	1200	1400	150 J	98 J	130 J	71 J	19 J	10 U
Pyrene	330	380 U	200 J	190 J	110 J	17 J	1200	960	150 J	100 J	140 J	70 J	380 U	10 U
Butylbenzylphthalate	330	380 U	360 U	430 U	440 U	400 U	520 U	50 J	420 UJ	410 U	410 U	470 U	380 U	10 U
3,3'-Dichlorobenzidine	330	380 U	360 U	430 U	440 U	400 U	520 U	460 U	420 UJ	410 U	410 U	470 U	380 U	10 U
Benzo(a)anthracene	330	380 U	95 J	430 U	42 J	400 U	630	460 U	420 UJ	410 U	67 J	470 U	380 U	10 U
Chrysene	330	380 U	120 J	240 J	230 J	400 U	730	530	110 J	80 J	88 J	51 J	380 U	10 U
Bis(2-ethylhexyl)phthalate	330	380 U	360 U	1200 J	660 J	400 U	520 U	460 U	420 UJ	410 U	410 U	470 U	380 U	10 U
Di-n-octylphthalate	330	380 UJ	360 U	97 J	120 J	400 U	520 U	460 UJ	420 UJ	410 U	410 U	470 U	380 U	10 U
Benzo(b)fluoranthene	330	380 UJ	24 J	130 J	440 UJ	400 U	1200	900 J	160 J	410 U	410 U	69 J	380 U	10 U
Benzo(k)fluoranthene	330	380 UJ	360 U	380 J	440 UJ	400 U	600	460 UJ	420 UJ	410 U	410 U	470 U	380 U	10 U
Benzo(a)pyrene	330	380 UJ	93 J	430 UJ	440 UJ	400 U	730	540 J	100 J	410 U	410 U	470 U	380 U	10 U
Indeno(1,2,3-cd)pyrene	330	380 UJ	70 J	430 UJ	440 UJ	400 U	550	360 J	53 J	410 U	410 U	470 U	380 U	10 U
Dibenz(a,h)anthracene	330	380 UJ	360 U	430 UJ	440 UJ	400 U	520 U	460 UJ	420 UJ	410 U	410 U	470 U	380 U	10 U
Benzo(g,h,i)perylene	330	380 UJ	360 U	430 UJ	440 UJ	400 U	180 J	460 UJ	420 UJ	410 U	410 U	470 U	380 U	10 U
DILUTION FACTOR:		1	1	1	1	1	1	1	1	1	1	1	1	1.03
DATE SAMPLED:		06/10/92	06/10/92	06/10/92	06/10/92	06/10/92	06/10/92	06/10/92	06/10/92	06/10/92	06/10/92	06/10/92	06/10/92	06/10/92
DATE EXTRACTED:		06/17/92	06/17/92	06/17/92	06/17/92	06/17/92	06/17/92	06/17/92	06/22/92	06/17/92	06/17/92	06/17/92	06/17/92	06/15/92
DATE ANALYZED:		06/25/92	07/09/92	06/24/92	06/25/92	06/24/92	07/09/92	07/09/92	07/16/92	07/09/92	07/09/92	07/09/92	07/09/92	06/19/92
% MOISTURE:		14	9	24	25	18	37	28	21	19	20	30	13	

c:\1000908\18284SVS.WK1

SITE: BURT COMPANY

CASE: 18284 SDG: AAR75

Pesticide/PCB Soil Analysis
ug/Kg

Sample Number:		AAR75	AAR76	AAR77	AAR78	AAR79	AAR80	AAR81	AAR82	AAR83	AAR84	AAR85
Sample Location:		SS-01	SS-02	SS-03	SS-04	SS-05	SD-06	SD-07	SD-08	SD-09	SD-10	SD-11
Laboratory Number:		0847001	0847002	0847003	0847004	0847005	0847006	0847007	0847008	0847009	0847010	0847011
COMPOUND	CRQL											
alpha-BHC	1.7	2.0 U	1.9 U	2.2 U	2.3 U	2.1 U	2.7 U	2.4 U	2.2 U	2.1 U	2.1 U	2.4 U
beta-BHC	1.7	2.0 U	1.9 U	2.2 U	2.3 U	2.1 U	2.7 U	2.4 U	2.2 U	2.1 U	2.1 U	2.4 U
delta-BHC	1.7	2.0 U	1.9 U	2.2 U	2.3 U	2.1 U	2.7 U	2.4 U	2.2 U	2.1 U	2.1 U	2.4 U
gamma-BHC(Lindane)	1.7	2.0 U	1.9 U	2.2 U	2.3 U	2.1 U	2.7 U	2.4 U	2.2 U	2.1 U	2.1 U	2.4 U
Heptachlor	1.7	2.0 U	1.9 U	2.2 U	2.3 U	2.1 U	0.28 J	2.4 J	2.2 U	2.1 U	2.1 U	2.4 U
Aldrin	1.7	2.0 U	1.9 U	2.2 U	2.3 U	2.1 U	2.7 U	2.4 U	2.2 U	2.1 U	2.1 U	2.4 U
Heptachlor Epoxide	1.7	2.0 U	1.9 U	2.2 U	2.3 U	2.1 U	2.7 U	2.4 U	2.2 U	2.1 U	2.1 U	2.4 U
Endosulfan I	1.7	2.0 U	1.9 U	2.2 U	2.3 U	2.1 U	2.7 U	2.4 U	2.2 U	2.1 U	2.1 U	2.4 U
Dieldrin	3.3	R	3.6 U	4.3 U	4.4 U	4.6 U	5.2 U	4.6 U	4.2 U	R	4.1 J	4.7 U
4,4'-DDE	3.3	3.8 U	1.8 J	11 J	8.9 J	R	16 J	4.6 U	4.2 U	4.1 U	4.1 U	4.7 U
Endrin	3.3	R	3.6 U	4.3 U	4.4 U	4.0 U	5.2 U	4.6 U	4.2 U	4.1 U	4.1 U	4.7 U
Endosulfan II	3.3	3.8 U	3.6 U	4.3 U	4.4 U	4.0 U	6.1	4.6 U	4.2 U	4.1 U	4.1 U	1.9 J
4,4'-DDD	3.3	3.8 U	3.6 U	7.4 J	5.4	4.0 U	5.2 U	28 J	4.2 U	4.1 U	4.1 U	4.7 U
Endosulfan Sulfate	3.3	3.8 U	3.6 U	4.3 U	4.4 U	4.0 U	5.2 U	4.6 U	4.2 U	4.1 U	4.1 U	4.7 U
4,4'-DDT	3.3	R	2.5 J	14	9.5 J	R	R	R	4.2 U	R	R	4.7 U
Methoxychlor	17.0	20 U	19 U	22 U	23 U	21 U	27 U	24 U	22 U	21 U	21 U	24 U
Endrin Ketone	3.3	3.8 U	3.6 U	4.3 U	4.4 U	4.0 U	5.2 U	4.6 U	4.2 U	4.1 U	4.1 U	4.7 U
Endrin-Aldehyde	3.3	3.8 U	3.6 U	4.3 U	4.4 U	4.0 U	5.2 U	4.6 U	4.2 U	4.1 U	4.1 U	4.7 U
alpha-Chlordane	1.7	2.0 U	1.9 U	2.2 U	2.3 U	2.1 U	2.9 J	R	2.2 U	2.1 U	2.1 U	2.4 U
gamma-Chlordane	1.7	2.0 U	1.9 U	2.2 U	2.3 U	2.1 U	2.7 U	0.51 J	2.2 U	2.1 U	2.1 U	2.4 U
Toxaphene	170.0	200 U	190 U	220 U	230 U	210 U	270 U	240 U	220 U	210 U	210 U	240 U
Aroclor 1016	33.0	38 U	36 U	43 U	44 U	40 U	52 U	46 U	42 U	41 U	41 U	47 U
Aroclor 1221	67.0	78 U	74 U	88 U	89 U	82 U	110 U	93 U	85 U	83 U	84 U	96 U
Aroclor 1232	33.0	38 U	36 U	43 U	44 U	40 U	52 U	46 U	42 U	41 U	41 U	47 U
Aroclor 1242	33.0	38 U	36 U	43 U	44 U	40 U	52 U	46 U	42 U	41 U	41 U	47 U
Aroclor 1248	33.0	38 U	36 U	43 U	44 U	40 U	52 U	46 U	42 U	41 U	41 U	47 U
Aroclor 1254	33.0	38 U	36 U	43 U	44 U	40 U	52 U	46 U	42 U	41 U	41 U	47 U
Aroclor 1260	33.0	38 U	36 U	43 U	44 U	40 U	R	350	400	220 J	390 J	47 U
Dilution Factor:		1	1	1	1	1	1	1	1	1	1	1
Date Sampled:		06/10/92	06/10/92	06/10/92	06/10/92	06/10/92	06/10/92	06/10/92	06/10/92	06/10/92	06/10/92	06/10/92
Date Extracted:		06/17/92	06/17/92	06/17/92	06/17/92	06/17/92	06/17/92	06/17/92	06/17/92	06/17/92	06/17/92	06/17/92
Date Analyzed:		06/30/92	06/30/92	07/06/92	07/06/92	06/30/92	06/30/92	06/30/92	06/30/92	06/30/92	06/30/92	06/30/92
% Moisture:		14	9	24	25	18	37	28	21	19	20	30

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IE: Burt Co., Portland, ME

INORGANIC SOIL ANALYSIS
(mg/Kg)

GE: 18284 SDG: MAT120
BORATORY: SKINNER & SHERMAN LABS

SAMPLE NUMBER:		MAT120	MAT121	MAT122	MAT123	MAT124	MAT125	MAT126	MAT127	MAT128	MAT129	MAT130	MAZ838	
SAMPLE LOCATION:		SS-01	SS-02	SS-03	SS-04	SS-05	SD-06	SD-07	SD-08	SD-09	SD-10	SD-11	SS-14	
ABORATORY NUMBER:		06128-01S	06128-02S	06128-03S	06128-04S	06128-05S	06128-06S	06128-07S	06128-08S	06128-09S	06128-10S	06128-11S	06128-13S	
% SOLIDS		86.5	91.0	75.8	78.1	80.9	61.3	71.4	79.5	81.2	84.0	71.7	85.8	
ORGANIC ELEMENTS		INSTRUMENT DETECTION LIMITS (mg/Kg)												CONTRACT DETECTION LIMITS (mg/Kg,ppb
UMINUM	P	4.2	8270	6970	7580	5700	26200	7790	8410	3540	3710	5880	30800	7700	40
TIMONY	P	2.2	3.00 U	2.40 U	2.90 U	2.80 U	R	5.40 U	2.90 U	2.70 U	2.60 U	3.40 U	R	2.50 U	12
SENIC	F	0.5	9.3	17.5	31.8	33.6	7.6	4.7 UJ	6.2	13.3	11.7	10.7	10.8	5.7 UJ	2
RIUM	P	1.0	220.0	90.1	6900	5900	98.2	88.7	99.9	34.9	51.1	42.8	203.0	9.0	4
RYLLIUM	P	0.2	0.54	0.52	0.40	0.45	1.20	0.78	0.67	0.33	0.29	0.48	1.10	0.55	
DMIUM	P	0.2	0.22 U	0.21 U	0.59 U	0.53 U	0.24 U	0.43 U	0.92 U	0.25 U	0.24 U	0.24 U	0.26 U	0.23 U	1
LCIUM	P	5.6	652	1040	3640	3260	2920	2800	1650	1660	1090	2680	3790	602	1000
ROMIUM	P	1.0	13.1	13.0	33.3	32.9	42.1	17.9	28.6	12.9	7.8	11.0	64.4	7.3	2
BALT	P	0.4	3.40	3.50	9.80	8.10	14.60	4.80	4.50	3.00	2.10	3.10	20.50	1.60	10
PPER	P	0.8	8.3	10.8	581.0	539.0	21.3	20.4	22.6	12.6	15.0	14.5	44.1	1.8	5
ON	P	5.0	7690	6940	12700	11000	30000	9050	11800	17000	10700	10100	43900	4780	20
AD	F	0.2	18.00	38.00	2230	1600	17.50	91.40	81.70	22.70	39.70	20.00	23.90	5.40	1
GNESIUM	P	27.5	1410	1690	2380	1890	7660	2380	2260	1920	1460	1890	11300	705	1000
NGANESE	P	0.2	119 J	87.9 J	132 J	106 J	530 J	118 J	148 J	209 J	143 J	82 J	608 J	30.9 J	3
RCURY	CV	0.02	1.40	0.11 U	0.29	0.32	0.12 U	0.23	0.13 U	0.11 U	0.11 U	0.12 U	0.13 U	0.12 U	0.1
CKEL	P	2.5	8.9	9.4	67.3	56.5	30.1	16.2	11.9	9.7	6.9	9.4	46.3	3.9	8
TASSIUM	P	39	719	696	1480	1040	4600	1200	1280	835	495	631	9910	325	1000
LENIUM	F	0.8	0.90 UJ	4.10 UJ	1.50 J	1.60 J	4.70 UJ	1.30 UJ	1.10 UJ	0.98 UJ	0.99 UJ	0.91 UJ	5.30 UJ	4.60 UJ	1
LVER	P	0.6	0.67 U	0.63 U	0.78 U	0.75 U	0.71 U	0.96 U	0.80 U	0.75 U	0.76 U	0.71 U	1.50 U	0.69 U	2
DIUM	P	6.8	70.9 U	63.2 U	441.0	157.0	R	209.0	114.0 U	150.0	77.8 U	133.0	R	74.1 U	1000
ALLIUM	F	0.2	0.22 U	0.21 U	0.26 U	0.24 U	0.34	0.31 U	0.27 U	0.24 U	0.25 U	0.23 U	0.42	0.23 U	2
NADIUM	P	0.4	11.9	13.4	442.0	411.0	54.7	19.9	22.5	20.0	9.9	11.0	76.8	10.8	10
NC	P	1.6	34.2 U	138.0 U	680.0 J	661.0 J	75.5 U	205.0 J	112.0 U	172.0 U	127.0 U	161.0 U	138.0 U	15.2 U	4
ANIDE	AS	10.0	0.57 U	0.51 U	0.62 U	0.60 U	0.61 U	0.80 U	0.68 U	0.71	0.59 U	0.56 U	0.70	0.54 U	—

ALYTICAL METHOD
- FURNACE
- ICP/FLAME AA
V - COLD VAPOR
S - SEMI AUTOMATED SPECTROPHOTOMETRIC

NOTE: J - QUANTITATION IS APPROXIMATE DUE TO LIMITATIONS IDENTIFIED IN THE QUALITY CONTROL REVIEW (DATA REVIEW).
-- VALUE IS NON-DETECTED
U - VALUE IS NON-DETECTED AND DETECTION LIMIT IS RAISED.
UJ- VALUE IS NON-DETECTED AND DETECTION LIMIT IS ESTIMATED.

VOLUMES USED IN PREPARING SAMPLE FOR ANALYSIS: Hg 0.10 L, AA & ICP 0.20 L, CN 0.25 L.

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WET WEIGHTS OF SAMPLES: 1.00 G FOR AA & ICP
0.20 G FOR Hg
5.00 G FOR CN

SITE: Burt Co., Portland, ME

INORGANIC AQUEOUS ANALYSIS
(ug/L)

CASE: 18284 SDG: MAT120
LABORATORY: SKINNER & SHERMAN LABS

SAMPLE NUMBER:	MAT131
SAMPLE LOCATION:	RB-12
LABORATORY NUMBER:	06128-12S

INORGANIC ELEMENTS		INSTRUMENT DETECTION LIMITS (ug/l, ppb			CONTRACT DETECTION LIMITS (ug/l,ppb)
ALUMINUM	P	21.0	25.6		200
ANTIMONY	P	11.0	12.4		60
ARSENIC	F	2.4	2.4	UJ	10
BARIUM	P	5.0	5.0	U	200
BERYLLIUM	P	1.0	1.0	U	5
CADMIUM	P	1.0	1.0	U	5
CALCIUM	P	28.0	44.0		5000
CHROMIUM	P	5.0	5.0	U	10
COBALT	P	5.0	2.0	U	50
COPPER	P	4.0	4.0		25
IRON	P	25.0	64.1		100
LEAD	F	1.0	4.3	J	3
MAGNESIUM	P	55.0	55.0	U	5000
MANGANESE	P	1.0	1.0	UJ	15
MERCURY	CV	0.2	0.2	UJ	0.2
NICKEL	P	5.0	5.0	U	40
POTASSIUM	P	194.0	194.0	U	5000
SELENIUM	F	4.0	4.0	UJ	5
SILVER	P	3.0	3.0	U	10
SODIUM	P	34.0	118.0		5000
THALLIUM	F	1.0	1.0	U	10
VANADIUM	P	2.0	2.0	U	50
ZINC	P	8.0	202.0	J	20
CYANIDE	C	10.0	10.0	U	

ANALYTICAL METHOD
F - FURNACE
P - ICP/FLAME AA
CV - COLD VAPOR
C - COLORIMETRIC

NOTE: J - QUANTITATION IS APPROXIMATE DUE TO LIMITATIONS IDENTIFIED IN THE QUALITY CONTROL REVIEW (DATA REVIEW).
R - VALUE IS REJECTED.
-- VALUE IS NON-DETECTED

18284HOH.WK1

TE: BURT COMPANY

SE: 18284 SDG: AAR75

Volatile Soil Analysis
ug/kg

SAMPLE NUMBER:		AAR75	AAR76	AAR77	AAR78	AAR79	AAR80	AAR81	AAR82	AAR83	AAR84	AAR85	ABR54	AAR86	AAR87
SAMPLE LOCATION:		SS-01	SS-02	SS-03	SS-04	SS-05	SD-06	SD-07	SD-08	SD-09	SD-10	SD-11	SS-14	RB-12	TB-13
LABORATORY NUMBER:		0847001	0847002	0847003	0847004	0847005	0847006	0847007	0847008	0847009	0847010	0847011	0847014	0847012	0847013
COMPOUND	CRQL														
loromethane	10	12 U	11 U	14 U	14 U	12 U	13 U	11 U	14 U	14 U	15 U	14 UJ	12 U	10 U	10 U
omomethane	10	12 U	11 U	14 U	14 U	12 U	13 U	11 U	14 U	14 U	15 U	14 U	12 U	10 U	10 U
nyl Chloride	10	12 U	11 U	14 U	14 U	12 U	13 U	11 U	14 U	14 U	15 U	14 U	12 U	10 U	10 U
loroethane	10	12 U	11 U	14 U	14 U	12 U	13 U	11 U	14 U	14 U	15 U	14 U	12 U	10 U	10 U
thylene Chloride	10	12 U	11 U	14 U	14 U	12 U	13 U	11 U	14 U	14 U	15 U	14 U	12 U	10 U	10
etone	10	12 UJ	11 UJ	50 UJ	56 UJ	16 UJ	97 UJ	23 UJ	37 UJ	19 UJ	33 UJ	18 UJ	12 UJ	16 J	10 U
rbon Disulfide	10	12 U	11 U	14 U	14 U	12 U	13 U	11 U	14 U	14 U	15 U	14 U	12 U	10 U	10 U
1-Dichloroethene	10	12 U	11 U	14 U	14 U	12 U	13 U	11 U	14 U	14 U	15 U	14 U	12 U	10 U	10 U
1-Dichloroethane	10	12 U	11 U	14 U	14 U	12 U	13 U	11 U	14 U	14 U	15 U	14 U	12 U	10 U	10 U
2-Dichloroethene (Total)	10	12 U	11 U	14 U	14 U	12 U	13 U	11 U	14 U	14 U	15 U	14 U	12 U	10 U	10 U
loroform	10	12 U	11 U	14 U	14 U	12 U	13 U	11 U	14 U	14 U	15 U	14 U	12 U	10 U	10 U
2-Dichloroethane	10	12 U	11 U	14 U	14 U	12 U	13 U	11 U	14 U	14 U	15 U	14 U	12 U	10 U	13
Butanone	10	12 UJ	11 UJ	13 J	16 J	12 UJ	23 J	11 UJ	14 UJ	14 UJ	9 J	14 U	12 UJ	10 U	10 U
1,1-Trichloroethane	10	12 U	0.6 J	14 U	14 U	12 U	13 U	11 U	14 U	14 U	15 U	14 U	12 U	10 U	10 U
rbon Tetrachloride	10	12 U	11 U	14 U	14 U	12 U	13 U	11 U	14 U	14 U	15 U	14 U	12 U	10 U	10 U
nyl Acetate	10	12 U	11 U	14 U	14 U	12 U	13 U	11 U	14 U	14 U	15 U	14 U	12 U	10 U	10 U
omodichloromethane	10	12 U	11 U	14 U	14 U	12 U	13 U	11 U	14 U	14 U	15 U	14 U	12 U	10 U	10 U
2-Dichloropropane	10	12 U	11 U	14 U	14 U	12 U	13 U	11 U	14 U	14 U	15 U	14 U	12 U	10 U	10 U
s-1,3-Dichloropropene	10	12 U	11 U	14 U	14 U	12 U	13 U	11 U	14 U	14 U	15 U	14 U	12 U	10 U	10 U
ichloroethene	10	12 U	11 U	14 U	2 J	12 U	13 U	11 U	14 U	14 U	15 U	14 U	12 U	10 U	10 U
promochloromethane	10	12 U	11 U	14 U	14 U	12 U	13 U	11 U	14 U	14 U	15 U	14 U	12 U	10 U	10 U
1,2-Trichloroethane	10	12 U	11 U	14 U	14 U	12 U	13 U	11 U	14 U	14 U	15 U	14 U	12 U	10 U	10 U
nzene	10	12 U	11 U	14 U	14 U	12 U	13 U	11 U	14 U	14 U	15 U	14 U	12 U	10 U	10 U
ans-1,3-Dichloropropene	10	12 U	11 U	14 U	14 U	12 U	13 U	11 U	14 U	14 U	15 U	14 U	12 U	10 U	10 U
omoform	10	12 U	11 U	14 U	14 U	12 U	13 U	11 U	14 U	14 U	15 U	14 U	12 U	10 U	10 U
Methyl-2-pentanone	10	12 U	11 U	14 U	14 U	12 U	13 U	11 U	14 U	14 U	15 U	14 U	12 U	10 U	10 U
Hexanone	10	12 U	11 U	14 U	14 U	12 U	13 U	11 U	14 U	14 U	15 U	14 U	12 U	10 U	10 U
trachloroethene	10	12 U	11 U	14 U	14 U	12 U	13 U	11 U	14 U	14 U	15 U	14 U	12 U	10 U	10 U
1,2,2-Tetrachloroethane	10	12 U	11 U	14 U	14 U	12 U	13 U	11 U	14 U	14 U	15 U	14 U	12 U	10 U	10 U
luene	10	12 U	11 U	14 U	14 U	12 U	13 U	11 U	14 U	14 U	15 U	14 U	12 U	R	R
lorobenzene	10	12 U	11 U	14 U	14 U	12 U	13 U	11 U	14 U	14 U	15 U	14 U	12 U	10 U	10 U
ylbenzene	10	12 U	11 U	14 U	14 U	12 U	13 U	11 U	0.6 J	14 U	15 U	14 U	12 U	10 U	10
yrene	10	12 U	11 U	14 U	14 U	12 U	13 U	11 U	14 U	14 U	15 U	14 U	12 U	10 U	1
lene (total)	10	0.6 J	11 U	14 U	14 U	12 U	13 U	11 U	14 U	14 U	15 U	14 U	12 U	10 U	10 U
DILUTION FACTOR:		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
DATE SAMPLED:		06/10/92	06/10/92	06/10/92	06/10/92	06/10/92	06/10/92	06/10/92	06/10/92	06/10/92	06/10/92	06/10/92	06/10/92	06/10/92	06/09/92
DATE ANALYZED:		06/16/92	06/16/92	06/16/92	06/16/92	06/16/92	06/16/92	06/16/92	06/16/92	06/16/92	06/16/92	06/17/92	06/17/92	06/22/92	06/22/92
% MOISTURE:		16	12	27	27	28	25	12	29	30	35	28	14		

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Semivolatile Soil Analysis
(ug/Kg)

SITE: BURT COMPANY

CASE: 18284 SDG: AAR75

SAMPLE NUMBER:		AAR75	AAR76	AAR77	AAR78	AAR79	AAR80	AAR81	AAR82	AAR83	AAR84	AAR85	ABR54	AAR86
SAMPLE LOCATION:		SS-01	SS-02	SS-03	SS-04	SS-05	SD-06	SD-07	SD-08	SD-09	SD-10	SD-11	SS-14	RB-12
LABORATORY NUMBER:		0847001	0847002	0847003	0847004	0847005	0847006	0847007	0847008	0847009	0847010	0847011	0847014	0847012
COMPOUND	CRQL													
Phenol	330	380 U	360 U	430 U	440 U	400 U	520 U	460 UJ	420 UJ	410 U	410 U	470 U	380 U	1[redacted]
bis(2-Chloroethyl) ether	330	380 U	360 U	430 U	440 U	400 U	520 U	460 U	420 UJ	410 U	410 U	470 U	380 U	10 U
2-Chlorophenol	330	380 U	360 U	430 U	440 U	400 U	520 U	460 UJ	420 UJ	410 U	410 U	470 U	380 U	10 U
1,3-Dichlorobenzene	330	380 U	360 U	430 U	440 U	400 U	520 U	460 U	420 UJ	410 U	410 U	470 U	380 U	10 U
1,4-Dichlorobenzene	330	380 U	360 U	430 U	440 U	400 U	520 U	460 U	14 J	410 U	410 U	470 U	380 U	10 U
1,2-Dichlorobenzene	330	380 U	360 U	430 U	440 U	400 U	520 U	460 U	47 J	410 U	410 U	470 U	380 U	10 U
2-Methylphenol	330	380 U	360 U	430 U	440 U	400 U	520 U	460 UJ	420 UJ	410 U	410 U	470 U	380 U	10 U
2,2'-Oxybis(1-Chloropropane)	330	380 U	360 U	430 U	440 U	400 U	520 U	460 U	420 UJ	410 U	410 U	470 U	380 U	10 U
4-Methylphenol	330	380 U	360 U	430 U	440 U	400 U	520 U	460 UJ	420 UJ	410 U	410 U	470 U	380 U	10 U
N-Nitroso-di-n-propylamine	330	380 U	360 U	430 U	440 U	400 U	520 U	460 U	420 UJ	410 U	410 U	470 U	380 U	10 U
Hexachloroethane	330	380 U	360 U	430 U	440 U	400 U	520 U	460 U	420 UJ	410 U	410 U	470 U	380 U	10 U
Nitrobenzene	330	380 U	360 U	430 U	440 U	400 U	520 U	460 U	420 UJ	410 U	410 U	470 U	380 U	10 U
Isophorone	330	380 U	360 U	430 U	440 U	400 U	520 U	460 U	420 UJ	410 U	410 U	470 U	380 U	10 U
2-Nitrophenol	330	380 U	360 U	430 U	440 U	400 U	520 U	460 UJ	420 UJ	410 U	410 U	470 U	380 U	10 U
2,4-Dimethylphenol	330	380 U	360 U	430 U	440 U	400 U	520 U	460 UJ	420 UJ	410 U	410 U	470 U	380 U	10 U
bis(2-Chloroethoxy)methane	330	380 U	360 U	430 U	440 U	400 U	520 U	460 U	420 UJ	410 U	410 U	470 U	380 U	10 U
2,4-Dichlorophenol	330	380 U	360 U	430 U	440 U	400 U	520 U	460 UJ	420 UJ	410 U	410 U	470 U	380 U	10 U
1,2,4-Trichlorobenzene	330	380 U	360 U	430 U	440 U	400 U	520 U	460 U	420 UJ	410 U	410 U	470 U	380 U	10 U
Naphthalene	330	380 U	360 U	36 J	28 J	400 U	61 J	97 J	61 J	410 U	410 U	470 U	380 U	10 U
4-Chloroaniline	330	380 U	360 U	430 U	440 U	400 U	520 U	460 U	420 UJ	410 U	410 U	470 U	380 U	10[redacted]
Hexachlorobutadiene	330	380 U	360 U	430 U	440 U	400 U	520 U	460 U	420 UJ	410 U	410 U	470 U	380 U	10[redacted]
4-Chloro-3-Methylphenol	330	380 U	360 U	430 U	440 U	400 U	520 U	460 UJ	420 UJ	410 U	410 U	470 U	380 U	10 U
2-Methylnaphthalene	330	380 U	360 U	31 J	31 J	400 U	520 U	60 J	170 J	410 U	410 U	470 U	380 U	10 U
Hexachlorocyclopentadiene	330	380 U	360 U	430 U	440 U	400 U	520 U	460 U	420 UJ	410 U	410 U	470 U	380 U	10 U
2,4,6-Trichlorophenol	330	380 U	360 U	430 U	440 U	400 U	520 U	460 UJ	420 UJ	410 U	410 U	470 U	380 U	10 U
2,4,5-Trichlorophenol	800	930 U	880 U	1000 U	1100 U	980 U	1300 U	1100 UJ	1000 UJ	990 U	1000 U	1100 U	920 U	26 U
2-Chloronaphthalene	330	380 U	360 U	430 U	440 U	400 U	520 U	460 U	420 UJ	410 U	410 U	470 U	380 U	10 U
2-Nitroaniline	800	930 U	880 U	1000 U	1100 U	980 U	1300 U	1100 U	1000 UJ	990 U	1000 U	1100 U	920 U	26 U
Dimethylphthalate	330	380 U	360 U	430 U	440 U	400 U	520 U	460 U	420 UJ	410 U	410 U	470 U	380 U	10 U
Acenaphthylene	330	380 U	360 U	54 J	30 J	400 U	160 J	62 J	20 J	410 U	410 U	470 U	380 U	10 U
2,6-Dinitrotoluene	330	380 U	360 U	430 U	440 U	400 U	520 U	460 U	420 UJ	410 U	410 U	470 U	380 U	10 U
3-Nitroaniline	800	930 U	880 U	1000 U	1100 U	980 U	1300 U	1100 U	1000 UJ	990 U	1000 U	1100 U	920 U	26 U
Acenaphthene	330	380 U	360 U	430 U	440 U	400 U	520 U	150 J	50 J	410 U	410 U	470 U	380 U	10 U
2,4-Dinitrophenol	800	930 U	880 U	1000 U	1100 U	980 U	1300 U	1100 UJ	1000 UJ	990 U	1000 U	1100 U	920 U	26 U
4-Nitrophenol	800	930 U	880 U	1000 U	1100 U	980 U	1300 U	1100 UJ	1000 UJ	990 U	1000 U	1100 U	920 U	26 U